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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,309	07/18/2003	David Jeffrey Miller	DCS-9184	3466

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EXAMINER	
GORDON, BRIAN R	

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,309	MILLER, DAVID JEFFREY	
	Examiner	Art Unit	
	Brian R. Gordon	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed April 21, 2005 have been fully considered but they are not persuasive. Applicant states "Balisky always adjusts the content of the bath on a historical rate averaged over time." Based on a discloser from the abstract, applicant concludes "In other words, Balisky's replenishment condition, whether it be chemical rate flow, usage, cumulative supply status, pump status, and the like, is determined as a measured historical average over time." Applicant has mischaracterized the statement taken from the abstract and the invention as a whole. The abstract states:

"The rate of continued replenishment of the predetermined constituent of the chemical bath is determined in response to the replenishment condition, which may be **elapsed time**, ampere-hours (or coulombs), number of product loads, product surface area, or **line speed over time**."

The passage lists a series of alternative variables which the rate or replenishment may be predetermined. Applicant has taken the phrase "over time" and interpreted as to read as each of the listed variables are averaged over time. Line speed over time is simply one variable which may be used to calculate the rate.

The first variable listed is "elapsed time". Elapsed time may be considered a single specific time period of minutes, hours, days, months, or etc.

There is no distinguishable difference between the terms "specifically defined time period" and "a single specifically defined time period". Both terms could be interpreted as or defined by the same amount of time. The claim does not provide a

specified amount of time for one to distinguish or determine what is considered a single specifically defined time period. Applicant has provided a specific example, however, the example is specific to a specific day of the week and the claim is directed broadly to a time period.

Furthermore Balisky teaches, "it (LCU) condenses continuous sensor readings into maximum, average, and minimum values over **specified time periods** and reports them to a supervisory computer (or Manager) as such" (column 11, last paragraph).

For reasons given herein the previous rejection of the claims are hereby maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Balisky US 6,521,112.

Balisky discloses a device and method for controlling the content of a chemical bath (abstract).

In a first aspect thereof, is in the form of a method of controlling the content of a chemical bath. This method aspect of the invention includes the steps of: first determining a rate of continued replenishment of a predetermined constituent of the chemical bath; second determining a replenishment condition for the chemical bath; and adjusting the rate of continued replenishment of the predetermined constituent of the chemical bath in response to the replenishment condition.

The rate of continued replenishment in the step of first determining is based on an historical replenishment rate. The step of second determining a replenishment condition includes, in one embodiment of the invention, the step of monitoring elapsed time. In other embodiments, the step of second determining a replenishment condition. (column 1, lines 47-64)

The replenisher aspect of the invention is a combination of software, computer/controller hardware, and chemical dispensing hardware that is able simultaneously to: Receive commands and send responses or status to a host computer. Receive commands and send responses or status to a user keypad and display terminal. Start, monitor, and stop multiple chemical deliveries independently to multiple destinations.

Some of the parameters monitored or tracked by the system are: Chemical flow rate Chemical usage, cumulative Chemical supply status (OK, low, empty) Pump status (on, off, disabled) Pump calibration factors (calibration and control features). (column 2, line 63 – column 3 line 12)

Replenishment of a chemical bath proceeds at a predetermined rate that may be based on historical experience with the particular operating bath. Alternatively, the existing replenishment rate in effect in a given system may be predetermined based on experience with similar or related chemical systems.

When an analysis result is obtained, the change in analytical reading since the last analysis is calculated. If result averaging is in effect, this same equation applies but the Current Reading is replaced with the average of the current and previous n readings and the Previous Reading is replaced with the average of the previous reading and its corresponding previous n readings.

Furthermore Balisky teaches, "The LCU is a combination of software, computer or controller hardware, signal conditioning modules, sensors and actuators. It is used to monitor, control and report a variety of physical parameters including temperature, level, conductivity, pH, voltage, current, pressure, flow, and other parameters that can be measured by a sensor. It is employed where continuous monitoring and/or immediate control response is required. Also, it condenses continuous sensor readings into maximum, average, and minimum values over specified time periods and reports them to a supervisory computer (or Manager) as such." (column 11, last paragraph).

The examiner asserts the LCU inherently functions to allow for replenishment of the system as based upon specified time periods.

4. Claims 3-6, and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Balisky US 6,521,112.

Balisky does not disclose the n previous readings averaged are based on defined specific time periods of days or weeks.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the consumption of chemicals in the baths may be monitored and replenished daily or weekly in order to ensure the appropriate chemical balance is maintained for proper electroplating of the desired materials.

As to claims 3-5, Balisky teaches the replenisher aspect of the present invention is a combination of software, computer/controller hardware, and chemical dispensing hardware that is able simultaneously to: Receive commands and send responses or status to a host computer. Receive commands and send responses or status to a user keypad and **display** terminal. Start, monitor, and stop multiple chemical deliveries independently to multiple destinations (column 2, last paragraph).

Known arrangements employ a microprocessor to compare the sensor **signals** obtained by the feed-backward control sensors against set points obtained by the predictive model and control/tolerance limits. If the values exceed the control/tolerance limits, the system can (1) recommend additional replenisher additions; (2) recommend postponing upcoming fee-forward additions for a determined period of ampere-time;

and/or (3) assist the user in bringing the bath parameters back into their desired ranges via diagnostic screens (column 1, lines 31-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the signal and display system may be employed to signal the operator and system of the status of the reagents in order to determine when the reagents are to be replenished and the bath should be analyzed.

Allowable Subject Matter

5. Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach nor fairly suggest displaying or issuing an alert message to an operator identifying the type of and number of reagents forecast to be exhausted and the need to be resupplied.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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